An Analysis of Excess Stock Returns and Fat Tail Distributions for Flyer Fund Stocks, 2007/2011

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1) Study Purpose

To determine if excess return distributions as measured by excess kurtosis are useful predictors of future stock returns

2) Data Requirements

Monthly returns for 20 stocks, 2007-2011
Monthly returns for S&P 500, 2007-2011

3) Excess Return Model Specification

$$ER_i = (R_{it} - R_{mt})$$

$$\overline{ER}_i = \sum_{i=1}^{n} \frac{(R_{it} - R_{mt})}{n}$$

Where:
$E\overline{R}_i$ = Average Excess returns for stock
R_{it} = Return to stock at time t
R_{mt} = Return to market at time t
ER_i = Excess return for stock

4) Excess Kurtosis Model Specification

$$EK_i = \sum_{t=1}^{n} \frac{(ER_{it} - \overline{ER_i})^4}{n-1(\sigma_{ER_i})} - 3$$

Where:
EK_i = Excess kurtosis for stock
t = monthly data, 12/31/06 – 12/31/10

5) Regression Model

$$R_i = a + b\,(+EK)$$
$$R_i = a + b\,(-EK)$$

Where:
R_i = Return for i^{th} stock 2011 (I = 1 – 20)
$+EK_i$ = Excess Kurtosis for positive returns
$-EK_i$ = Excess Kurtosis for negative returns

6) Cross Sectional Regression Results

Positive Returns						
Time Period	**Ind Var**	**N**	**R^2**	**A**	**B**	**T Stat**
12/31/10 - 4/30/11	+ EK	16	0.032126	0.054749	0.004516	0.681688
9/30/11 - 2/29/12	+ EK	16	0.070409	0.092967	0.013366	0.320589
2011	+ EK	16	0.265734	0.026545	0.028709	2.250924

Negative Returns						
Time Period	**Ind Var**	**N**	**R^2**	**A**	**B**	**T Stat**
4/30/11 - 9/30/11	-EK	20	0.249835	-0.01929	-0.01382	-2.44842
2011	-EK	20	0.492338	0.186716	-0.02429	-4.17812

7) Conclusions

For +EK

- b is positive for all results
- R^2 is small
- Excluding stocks with extreme values both b coefficient and R^2 become more robust
- EK has predictive

For –EK

- B coefficients have right sign and are statistically significant
- R^2 – 25 to 49% of the variation in R_i is explained by EK